April 8, 1952 H. W. GILBERT 2,591,694

REEL SUPPORT STRUCTURE FOR MULTIPLE MARKER DEVICES

Filed Aug. 16, 1946 2 SHEETS—SHEET 1

Fig. 1

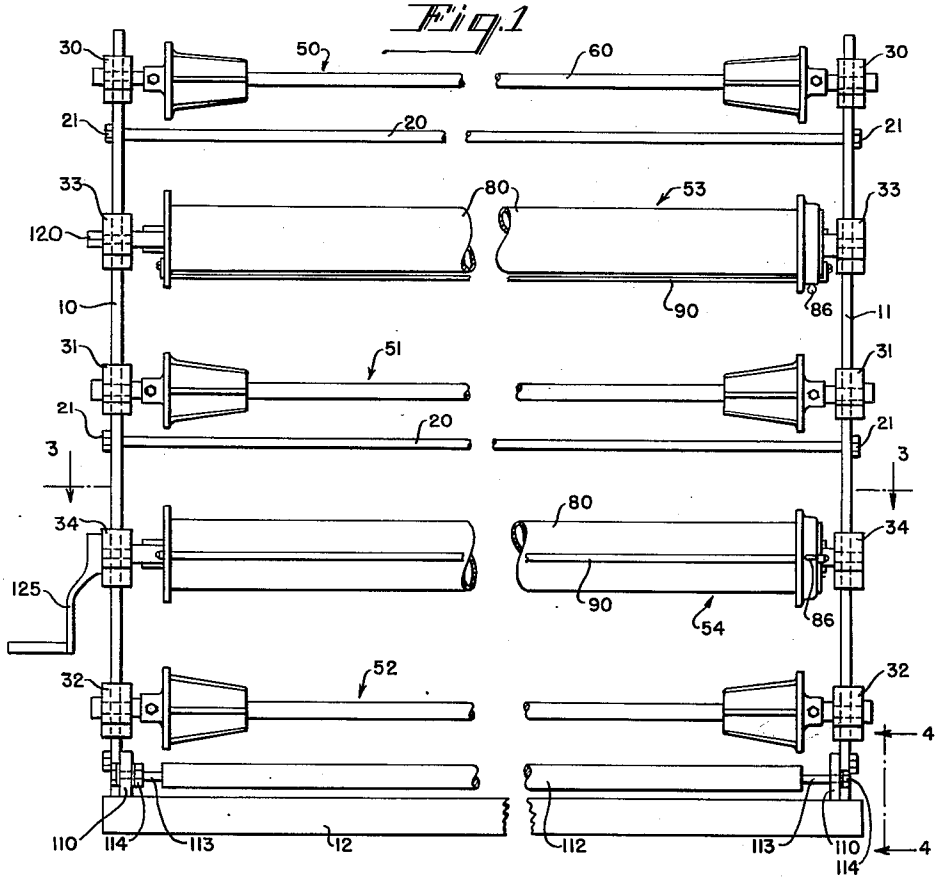


Fig. 3

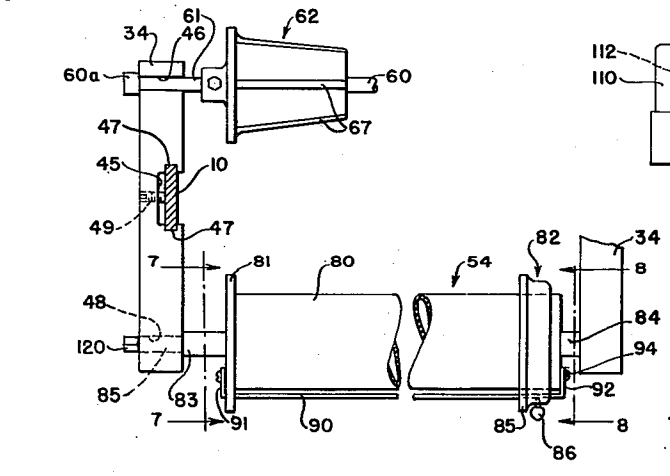
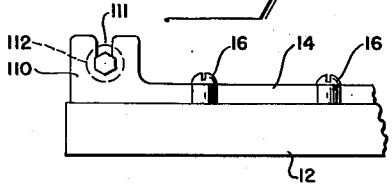


Fig. 4



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Fig. 2

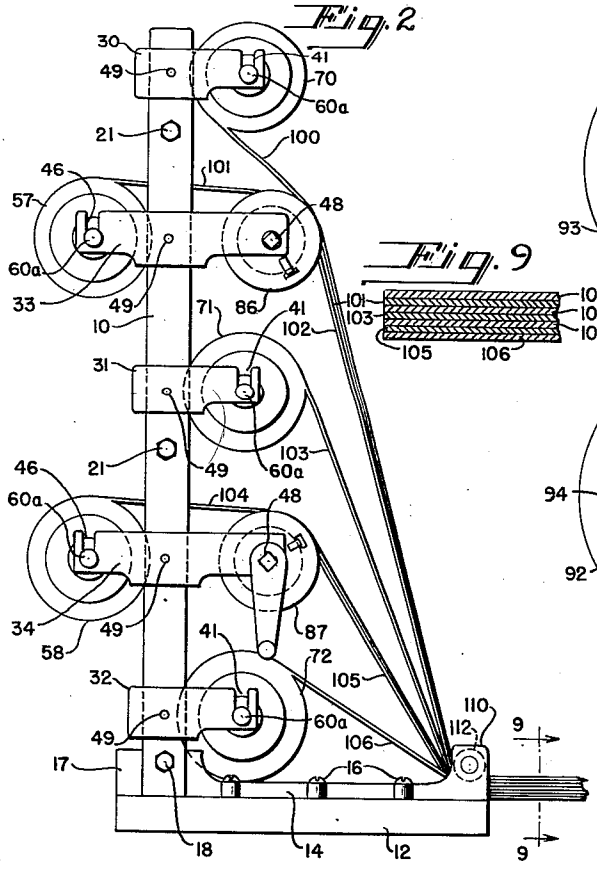


Fig. 9

Fig. 7

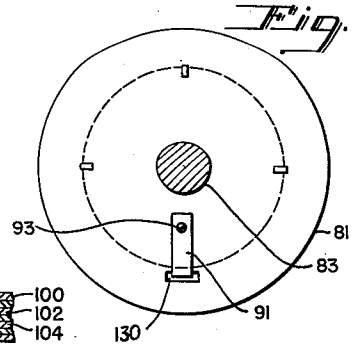


Fig. 8

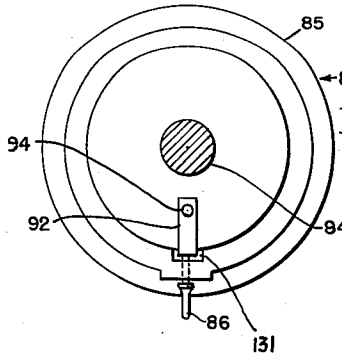


Fig. 6

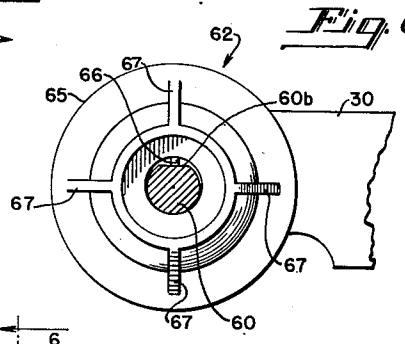
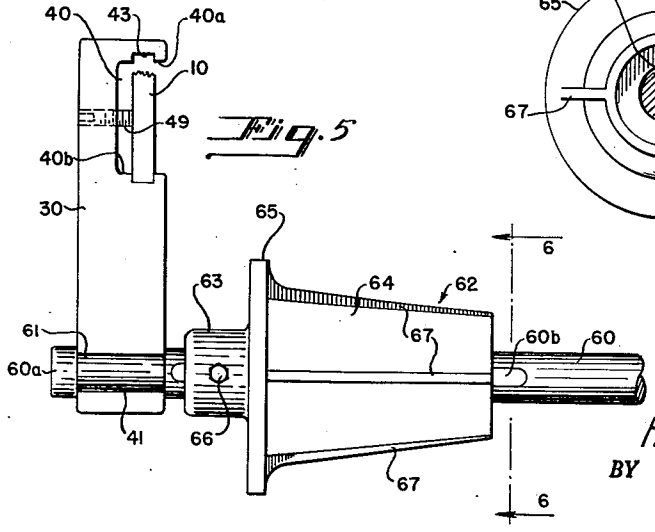


Fig. 5



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REEL SUPPORT STRUCTURE FOR MULTIPLE MARKER DEVICES

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12 Claims. (Cl. 270—52)

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This invention relates generally to devices employed in the manufacture of garments in the ready-to-wear industry.

In the manufacture of garments for wear it has heretofore been the customary practice to first design patterns for the component parts of the garment. These patterns were then laid out on the topmost or pattern layer of a plurality of superposed layers of textile material. A high degree of care and skill is generally required to effectively arrange the patterns on the said top layer so as to reduce the wastage of material to a minimum, and consequently this job is time consuming to a marked degree. After the patterns have been satisfactorily arranged as above described the outlines thereof were then traced on the said topmost layer. Then the cutter would cut through the entire stack of layers, following the contour of the patterns on the pattern layer. The cut out component parts of the garment were then ready for sewing together to produce the finished garment.

The above described procedure had inherent therein many disadvantages. One such disadvantage was found in the fact that when the cutting operation was performed the pattern layer was also cut with the stack thus destroying its further usefulness as a pattern layer. If it were desired to cut another stack of layers according to the same patterns it was necessary for the cutters to go through the whole tedious and time consuming process of laying out the component garment parts on another pattern layer.

It is therefore one of the principal objects of my invention to provide a novel device designed to overcome the above described inherent disadvantages of the hitherto practiced procedure so that a plurality of top or pattern layers may be simultaneously produced by the expenditure of substantially the same amount of time as it formerly took to produce a single pattern layer.

Another object of my invention is to provide a multiple marker device so designed as to conserve space to be economical, highly efficient and effective in use and at the same time represent a general improvement in the art.

Other objects of my invention will become apparent from the description to follow or will hereinafter be more fully pointed out.

In the accompanying drawings,

Fig. 1 is a front elevational view of a multiple marker device constructed and arranged in accordance with my invention;

Fig. 2 is a side elevational view thereof, and additionally illustrating the manner of its effective use;

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Fig. 3 is an enlarged cross-sectional view taken substantially along the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary elevational view of a portion of the opposite side of the device from that shown in Fig. 2, and as viewed along the line 4—4 of Fig. 1;

Fig. 5 is an enlarged top plan view of a portion of the device shown in Fig. 1;

Fig. 6 is a cross-sectional view taken substantially along the line 6—6 of Fig. 5;

Figs. 7 and 8 are enlarged cross-sectional views taken substantially along the lines 7—7 and 8—8 respectively of Fig. 3; and

Fig. 9 is a cross-sectional view taken substantially along the line 9—9 of Fig. 2.

Referring now in detail to the drawings I have shown a multiple marker device constructed and arranged in accordance with my invention and comprising a pair of spaced apart vertically disposed supporting bars 10 and 11. The said bars 10 and 11 are preferably of rigid metallic material and are supported on a base 12, which may be of wood or any other suitable matter, by the brackets 14. The said brackets 14 are fixed to the base 12, adjacent the transverse ends thereof by screws 16 penetrating into the material of the said base 12. The brackets 14 are provided with aligned rear end shoulder portions 17 and the bars 10 and 11 are held in position by bolts and nuts 18 passing through the said bars 10 and 11 and through the said shoulder portions 17.

A pair of cross rods 20 having reduced threaded end portions passing through the bars 10 and 11 and secured by nuts 21, serve to maintain the said bars 10 and 11 in sturdy and spaced relationship.

In accordance with my invention the following means are employed to rotatably support a plurality of rollers, some carrying supplies of suitable top or pattern layer material and others tracing material, such as carbon paper or cloth.

There are provided pairs of aligned single roll supporting brackets 30, 31 and 32 and pairs of aligned double roll supporting brackets 33 and 34.

Each of the brackets 30, 31 and 32 comprises a bar receiving opening 40 extending inwardly from the inner side and adjacent one end thereof and an open notch 41 extending downwardly from the top edge, adjacent the opposite end (see Fig. 5), the said notch portions of each pair of aligned brackets 30, 31 and 32 projecting inwardly towards each other. In the opposite transverse walls 40a and 40b of the opening 40 are grooves 43 of such

depth with respect to the width of the bars 10 and 11 as to slidably receive the same snugly therein.

Each of the brackets 33 and 34, as shown in Fig. 3 of the drawings comprises a bar receiving opening 45, extending inwardly from the inner side thereof and located between the ends and an open notch 46 adjacent the rear ends of the said brackets and extending downwardly from the top edges thereof. Adjacent the opposite ends of the brackets 33 and 34 from that of the notch 46 is a transverse through opening 48. In the opposite transverse walls 45a and 45b of the opening 45 are grooves 47 of such depth with respect to the width of the bars 10 and 11 as to slidably receive the same snugly therein.

It is thus seen from the above described construction that the brackets 30 to 34 are mounted on the upright bars 10 and 11 by merely sliding each bracket on a bar by causing the said bar to be received in the grooves 43 (in the case of the brackets 30, 31 and 32) and in the grooves 47 (in the case of the brackets 33 and 34). It is noted that in order to arrange the brackets on the bars, as shown in Figs. 1 and 2 of the drawing the lowermost brackets 32 must be mounted on the bars 10 and 11 first and then in succession the brackets 34, 31, 33 and finally the bracket 30.

To maintain the brackets 30 to 34 in proper aligned position I provide hollow headed set screws 49 threadedly passing through the said brackets 30 to 34 and frictionally engaging the bars 10 and 11 as clearly shown in Figs. 3 and 5 of the drawings.

Rotatably supported between corresponding pairs of brackets 30, 31 and 32 are rollers 50, 51 and 52, respectively, designed to receive thereon supply rolls of paper or similar material suitable for use as top or pattern layers for stacks of layers of material which it is desired to cut up into component garment parts.

Rotatably supported between corresponding pairs of brackets 33 and 34 are rollers 53 and 54, respectively designed to receive thereon supply rolls of material treated with carbon substance suitable for reproducing or tracing purposes, the function of which will soon become apparent.

Each of the rollers 50, 51 and 52 comprises a shaft 60 having reduced diameter portions 61 near opposite ends, the said shaft portions 61 being freely received in the open notches 41 of the said brackets 30, 31 and 32. The extreme end portions 60a of the shaft 60 being of the same diameter as the remainder of the said shaft 60 will serve to permit rotation of the shaft 60 and at the same time to prevent axial displacement. It is also noted that the shaft 60 may be readily lifted out of its bearing notches 41 for purposes of reloading or for any other desired reason. Mounted on each shaft 60 are a pair of core members 62, comprising a hub portion 63 and a hollow cone shaped portion 64 interconnected by an abutment flange 65. The pair of core members 62 are disposed adjacent opposite ends of the shaft 60 and are designed to receive therebetween a supply roll of paper by frictionally forcing the tapered cone portions 64 into opposite ends of the hollow core customarily employed for supply rolls of paper or the like. A portion 60b of the shaft 60 adjacent each end thereof is flattened longitudinally and a set screw 66 threadedly passing through the hub 63 and engaging the said flattened shaft portion 60b serves to maintain the core members 62 in any desired fixed position depending upon the length of the supply roll. Ribs 67 may be provided on the outer surface of the core portion 64 to facilitate the frictional gripping action of the supply roll core thereon.

In accordance with the above description and explanation, supply rolls 70, 71 and 72 are mounted on the rollers 50, 51 and 52, respectively.

Rotatably supported between corresponding pairs of brackets 33 and 34 are rollers 55 and 56 similar in construction and function to that of the above described rollers 50, 51 and 52 and journaled in the open notch bearings 46 of the said brackets 33 and 34. The said rollers 55 and 56 each being adapted to support supply rolls 57 and 58 of paper similar to the paper supply rolls on the rollers 50, 51 and 52.

As one of the features of my invention the carbon material supporting rollers 53 and 54 each comprise a drum 80 having a fixed flange 81 at one end thereof and an adjustably movable flange 82 at the opposite end, the purpose and function of the movable flange will be more fully explained hereinafter. The drum 80 is provided with aligned shafts 83 and 84 which are in turn provided with reduced diameter portions 85 rotatably received in the through openings 48 in the said brackets 33 and 34.

The movable flange 82 may comprise a collar member freely slidably surrounding the drum 80 and having a flange portion 85. The said flange 82 may be maintained in any selected position by means of a suitable set screw 86.

As hereinbefore mentioned the rollers 53 and 54 are adapted to receive thereon supply rolls 86 and 87 of carbon tracing material of any well known kind, such as, for example, the kind whereby tracing impressions may be made simultaneously from both upper and lower surfaces thereof.

To provide a grip at the beginning end of the carbon paper when it is put on the drum 80 and formed into rolls 86 and 87, I provide each roller 53 and 54 with a gripping bail member comprising the horizontal portion 90 and a pair of integral transverse arms 91 and 92. The arm 91 is freely pivotally mounted on the outer surface of the flange 81, by means of the pivot 93, while the arm 92 is freely pivotally mounted on the opposite end of the drum 80 by means of the pivot 94. The portion 90 at opposite ends pass freely through openings 130 and 131. The beginning end of the carbon paper is gripped between the bar 90 and the drum 80 and then rolled on the drum, passing over the said bar 90.

As noted in Figs. 1, 2 and 4 of the drawings the brackets 14 are provided, at their forward ends, with shoulder portions 110 in which there are provided open bearing notches 111 extending downwardly from the top thereof and into which there is freely rotatably received an idler roller 112. The said roller 112 is provided with reduced diameter end portions 113 received in the said notch bearings 111 and held against axial displacement by the nuts 114.

In Figs. 1 and 9 of the drawings I have shown the effective use and operation of my multiple carbon tracer device. Paper material layers 100 and 101 are first unrolled from the rolls 70 and 57 and passed downwardly over the roll 86. At the same time a layer of carbon material 102 is unrolled from the roll 86 and caused to underlie the layer 101. Then paper layer 103 is unrolled from the roll 71 to underlie the carbon layer 102, after which the paper layer 104 is unrolled from the roll 58 and passing over the roll 87 is caused to underlie the layer 103. A second carbon layer

105, is unrolled from the roll 87 to underlie the paper layer 105 and finally a paper layer 106, from the roll 72 is caused to underlie the carbon layer 105. The five paper layers 100, 101, 103, 104 and 106 and the two carbon layers 102 and 105 are all passed underneath the idler roller 112 and laid out flat on the cutting table (not shown). When the superposed paper layers and carbons as above described are paid off from their supply rolls a desired amount, the cutter then lays out the patterns of the component garment parts on the topmost paper layer 100. With suitable marking implements, the outline of the patterns are traced on the said top paper layer 100. As clearly noted in Fig. 9 of the drawings, the tracing of the pattern outlines will be marked on the said top layer 100 and due to the carbon layer 102 similar traced markings will appear on the undersurface of the paper layer 101 and on the upper surface of the paper layer 103. Due to carbon layer 105, impressions will be simultaneously traced on the under surface of the paper layer 104 and on the upper surface of the paper layer 106.

It is thus seen that in accordance with the above description I have been able to produce five pattern layers at one time.

While in the drawings I have illustrated my multiple marker device as applied to the simultaneous making of five markers, it is understood that my device may be made to produce three or seven or more markers at one time and my invention extends to such use.

It is noted that the bearing notches 111 in the brackets 14 are made of such depth as to permit the idler roller 112 to ride up therein without coming out of its bearing surface when a greater number of layers pass thereunder.

It is noted that in accordance with my invention other types of carbon layers may be employed having only one effective surface thereof, in which case a carbon layer would be required between each adjacent pair of paper layers.

After the patterns have been outlined and the markers completed as above described, I have provided the following means whereby the carbon layers 102 and 105 may be rewound on their rolls to conserve the same for future re-use.

It is noted that each shaft 83 of the drums 80 is provided with a portion 120 (see Fig. 3) projecting beyond the brackets 33 and 34, the said extending portion being non-circular in cross-sectional contour and designed to receive thereon the socket portion of a suitable handle 125 to facilitate the rotation of the drums 80. The gripping rod 90 serves to hold the carbon material on the drum so that the same may be rewound.

While the carbon layers 102 and 105 are being paid off their supply rollers by pulling the same under the idler roller 112 together with the paper layers 100, 101, 103, 104 and 106, the movable flanges 82 on the drums 80 are positioned according to the width of the carbon layer to serve as guides therefor. However, before rewinding the carbon layers on their drums, the movable flanges 82 are loosened and slidably moved in a direction away from the fixed flanges 81 to permit the free unhampered rolling up of the carbon layers even if the convolutions are not aligned. After the carbon layers have been completely rewound the disaligned convolutions of the roll may be evened up, or aligned, by slidably moving the flanges 82 in a direction toward the fixed flanges 81 so as to hit the edges of the carbon layers and to thereby cause them to be aligned. The set screws 86 may then be tightened to hold the flanges 82 in proper guiding position for unrolling.

After the carbon layers have been rewound so that they may be used again, the paper layers 100, 101, 103, 104 and 106 are then transversely cut at any suitable place to sever them from their supply rolls and the device is in readiness for making another set of markers.

In use my invention may be employed in connection with suitable cutting or marking tables, the multiple carbon tracer device, as above described being supported on a separate stand or on the cutting table or it may be affixed directly to one end of the table by affixing thereto the base brackets 14.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with the construction which I now consider to represent the best embodiment thereof, but I desire to have it understood that the construction shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combinations and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A multiple carbon tracer device of the character described, comprising a pair of spaced apart horizontally disposed longitudinal brackets, a pair of vertically disposed bar members, means for attaching the lower end of each of said bar members to one of said longitudinal brackets so that the same will be maintained in upright position, a plurality of roller supporting brackets slidably mounted on each bar member, the roller supporting brackets on one bar member corresponding to and being in aligned relationship with the roller supporting brackets of the other bar member, means for maintaining said roller supporting brackets in selected locations along said bar members, a plurality of roller members adapted to receive thereon continuous supply rolls of marker material, means for removably, rotatably supporting said roller members between corresponding pairs of roller supporting brackets, a drum adapted to receive thereon a continuous supply of carbon or similar tracing material, means for removably rotatably supporting said drum between a corresponding pair of said roller supporting brackets whereby the marker material and carbon material may be freely paid off from their supply rolls, as a stack of superposed layers, the said marker and carbon layers being arranged in predetermined successive arrangement, to simultaneously produce the required number of markers, and means for rewinding the carbon material on the drum.

2. A multiple carbon tracer device of the character described, comprising a pair of spaced apart horizontally disposed longitudinal brackets, a pair of vertically disposed bar members, means for attaching the lower end of each of said bar members to one of said longitudinal brackets so that the same will be maintained in upright position, a plurality of roller supporting brackets slidably mounted on each bar member, the roller supporting brackets on one bar member corresponding to and being in aligned relationship with the roller supporting brackets of the other bar member, means for maintaining said roller

supporting brackets in selected locations along said bar members, a plurality of roller members adapted to receive thereon continuous supply rolls of marker material, means for removably, rotatably supporting said roller members between corresponding pairs of roller supporting brackets, a drum adapted to receive thereon a continuous supply of carbon or similar tracing material, means for removably rotatably supporting said drum between a corresponding pair of said roller supporting brackets, an idler guide roller, means for rotatably mounting said guide roller between said pair of longitudinal brackets at a predetermined position forwardly with respect to said bar members whereby the marker material and carbon material may be freely paid off from their supply rolls, converged towards said guide roller and passed thereunder to emerge as a stack of superposed layers, the said marker and carbon layers being arranged in predetermined successive arrangement, to simultaneously produce the required number of markers, and manually operable means for rewinding the carbon material on the drum.

3. A multiple carbon tracer device according to claim 1 in which one pair of said corresponding pairs of roller supporting brackets is provided with means for removably, rotatably supporting therebetween, one roller member adapted to have a supply of marker material thereon and a drum adapted to have a supply of carbon material thereon.

4. A multiple carbon tracer device according to claim 1 in which each of said roller supporting brackets comprises a main body portion, a first opening in said body member, a second opening in said body member, the axes of said first and second openings being substantially at right angles to each other, said first opening being adapted to relatively slidably receive therein one of said bar members, said second opening being adapted to rotatably support therein one end of one of said roller members.

5. A multiple carbon tracer device according to claim 1 in which said drum comprises a longitudinal portion, a fixed flange at one end thereof, a flange slidably movably mounted on said longitudinal portion and means for releasably maintaining said movable flange against movement.

6. A multiple carbon tracer device according to claim 1 in which the means for selectively maintaining said roller supporting brackets along said bar members comprises a set screw carried by said bracket and adapted to frictionally engage said bar member.

7. A multiple carbon tracer device according to claim 1 in which the means for removably, rotatably supporting said roller members between corresponding pairs of roller supporting brackets comprises a shaft member, and open notches in said brackets for removably rotatably receiving opposite ends of said shaft member therein.

8. A multiple carbon tracer device according to claim 1 in which the means for removably rotatably supporting said drum between a corresponding pair of roller supporting brackets comprises a shaft, and bearing openings in said brackets for rotatably receiving said shaft therein.

9. A multiple carbon tracer device according to claim 2 in which the means for rotatably supporting said guide roller comprises aligned notched openings in said longitudinal brackets for receiving reduced diameter end portions of said guide roller.

10. A multiple carbon tracer device according to claim 1 in which each of said roller supporting brackets comprises a main body portion, a first opening in said body member, a second opening in said body member, the axes of said first and second openings being substantially at right angles to each other, said first opening being adapted to relatively slidably receive therein one of said bar members, said second opening being adapted to rotatably support therein one end of one of said roller members and releasable means carried by said bracket for maintaining said bracket against relative movement with respect to said bar member in said first opening.

11. A multiple carbon tracer device according to claim 1 in which each of said roller supporting brackets comprises a main body portion, a first opening in said body member, the axes of said first and second openings being substantially at right angles to each other, said first opening being provided with a pair of aligned grooves in opposite walls thereof adapted to slidably receive therein longitudinal edge portions of one of said bar members, said second opening extending downwardly from the upper surface of said main body and adapted to removably rotatably support therein one end of one of said roller members.

12. A multiple carbon tracer device according to claim 2 in which there is provided a base member and in which said longitudinal brackets are fixed to said bar member.

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